AMENDMENTS TO THE CLAIMS

Claims 1-5 (canceled)

Claim 6 (currently amended) A method of measuring the amount of oxidative stress in an individual, comprising the steps of:

(a) collecting tissue of interest from said individual;

(b) determining presence of oxidative stress in said tissue of interest, comprising measuring ~~the~~ an amount of mitochondrial DNA damage per length of mitochondrial DNA and determining a decrease in at least mRNA production and one or more of protein production, oxidative phosphorylation and ATP production in said tissue of interest ~~wherein said mitochondrial DNA damage is correlated with measurement selected from the group consisting of measurement of mitochondrial mRNA production, measurement of mitochondrial protein production, measurement of changes in mitochondrial oxidative phosphorylation and measurement of changes in mitochondrial ATP production;~~

(c) ~~determining the~~ measuring an amount of DNA damage per length of DNA in a nuclear gene in said tissue of interest, wherein said nuclear gene is selected from a group consisting of the β-globin locus, transcriptionally active genes and transcriptionally inactive genes; and

(d) comparing the amount of ~~DNA damage per length of DNA between said~~ mitochondrial DNA damage ~~and~~ with the amount of DNA damage in said nuclear gene, wherein a greater amount of ~~mitochondrial~~ DNA damage per

length of mitochondrial DNA than per length of nuclear DNA ~~damage per length of DNA~~ is indicative of an increased amount of oxidative stress in said individual.

Claim 7 (canceled).

Claim 8 (previously presented) The method of claim 6, wherein said mitochondrial DNA damage and DNA damage to said nuclear gene is determined by quantitative PCR, wherein said DNA is treated with FAPY glycosylase prior to said PCR amplification for detection of 8-oxo-G-lesion.

Claim 9 (original) The method of claim 6, wherein increased amounts of oxidative stress are predictive of atherogenesis, hypertension, diabetes mellitis, hypercholesterolemia, cigarette smoking, degenerative diseases of aging and cancer.

Claims 10-13 (canceled)